

This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

**WHAT IS CLAIMED IS:**

1. A print system comprising:
  - a print head that ejects ink;
  - an upstream transfer device that is provided in a feed path extending from a feed position to a counter area facing the print head, and transfers a recording medium along the feed path;
  - a downstream transfer device that is provided in a discharge path extending from the counter area to a discharge position, and transfers the recording medium along the discharge path;
  - a print instruction device that provides instructions for the upstream or downstream transfer device to transfer the recording medium and for the print head to eject ink in turn based on print data representing a predetermined image shown in an ejection pattern of ink to print the image upon the recording medium;
  - an ink amount measurement device that measures the amount of ink ejected from the print head and stores the amount as a measurement value; and
  - an ink amount determination device that determines whether the measurement value stored in the ink amount measurement device exceeds a preset value when the recording medium is transferred by the upstream transfer device and a

front end of the recording medium is moved to a first position, wherein

the downstream transfer device is comprised of a drive roller and a driven roller so that the recording medium can be passed through between the drive roller and the driven roller, and

the print instruction device discontinues the instructions based on the print data if it is determined by the ink amount determination device that the measurement value exceeds the preset value, and instructs the upstream transfer device to transfer the recording medium from the first position to the downstream transfer device, and when the front end of the recording medium is transferred to the downstream transfer device to be held between the drive roller and the driven roller, further instructs the upstream transfer device to transfer the recording medium to a second position located at least downstream of the first position, the second position being the position where the printing should be performed next to the printing at the first position, so that the instructions based on the print data are continued when the front end of the recording medium has reached to the second position.

2. The print system as set forth in claim 1 wherein

said ink amount measurement device measures the amount of ink based on the number of ink drops ejected from

the print head.

3. The print system as set forth in claim 1 wherein

said print instruction device stands by for a predetermined time in a state that the recording medium is transferred to the downstream transfer device and the front end of the recording medium is held between the drive roller and the driven roller.

4. The print system as set forth in claim 1 wherein

said print instruction device, when the recording medium is transferred to the downstream transfer device and the front end of the recording medium is held between the drive roller and the driven roller, instructs the upstream transfer device to transfer the recording medium from the downstream transfer device to a third position which is spaced apart from the first position by a predetermined distance on the side of the feed position, and when the front end of the recording medium is moved to the third position, instructs the upstream transfer device to transfer the recording medium from the third position to the first position, so that the instructions based on the print data are resumed, when the front end of the recording medium is moved to the first position.

5. The print system as set forth in claim 1 further

comprising

a recording medium parameter acquisition device that obtains parameter data representing parameters of the recording medium from the outside, wherein

said ink amount determination device modifies a preset value used for the determination of the measurement value according to the parameters shown as the parameter data obtained by the recording medium parameter acquisition device.

6. The print system as set forth in claim 5 further comprising

a parameter input device that allows a user to input the parameters of the recording medium, wherein

the recording medium parameter acquisition device obtains the parameters inputted from the parameter input device as said parameter data.

7. The print system as set forth in claim 5 wherein

said recording medium parameter acquisition device obtains data expressing the size of the recording medium as said parameter data.

8. The print system as set forth in claim 5 wherein

said recording medium parameter acquisition device obtains data expressing the thickness of the recording medium

as said parameter data.

9. The print system as set forth in claim 5 wherein said recording medium parameter acquisition device obtains data expressing the material of the recording medium as said parameter data.

10. The print system as set forth in claim 1 further comprising

a mode switching device that switches the operation mode of the print system between a suspension mode and a regular mode, in the suspension mode the instructions based on the print data from the print instruction device being interrupted according to the determination result of said ink amount determination device, and in the regular mode the instructions not being interrupted regardless of the determination result of the ink amount determination device.

11. A print system comprising a printer and a terminal apparatus,

the printer comprising:

a print head that ejects ink;

an upstream transfer device that is provided in a feed path extending from a feed position to a counter area facing the print head, and transfers a recording medium along

the feed path;

a downstream transfer device that is provided in a discharge path extending from the counter area to a discharge position, and transfers the recording medium along the discharge path; and

a print instruction device that provides instructions for the upstream or downstream transfer device to transfer the recording medium and for the print head to eject ink in turn based on print data representing a predetermined image shown in an ejection pattern of ink to print the image upon the recording medium,

the terminal apparatus comprising:

an ink amount measurement device that measures the amount of ink ejected from the print head and stores the amount as a measurement value; and

an ink amount determination device that determines whether the measurement value stored in the ink amount measurement device exceeds a preset value when the recording medium is transferred by the upstream transfer device and a front end of the recording medium is moved to a first position, wherein

said printer and said terminal apparatus are communicable to each other for data exchange,

the downstream transfer device is comprised of a drive roller and a driven roller so that the recording medium can be

passed through between the drive roller and the driven roller, and

the print instruction device discontinues the instructions based on the print data if it is determined by the ink amount determination device that the measurement value exceeds the preset value, and instructs the upstream transfer device to transfer the recording medium from the first position to the downstream transfer device, and when the front end of the recording medium is transferred to the downstream transfer device to be held between the drive roller and the driven roller, further instructs the upstream transfer device to transfer the recording medium to a second position located at least downstream of the first position, the second position being the position where the printing should be performed next to the printing at the first position, so that the instructions based on the print data are continued when the front end of the recording medium has reached to the second position.

12. The print system as set forth in claim 11 wherein said printer comprises a recording medium parameter acquisition device that obtains parameter data representing parameters of the recording medium from the outside.

13. The print system as set forth in claim 12 wherein said printer comprises a parameter input device that



allows a user to input the parameters of the recording medium.

14. The print system as set forth in claim 11 wherein  
said printer comprises a mode switching device that switches the operation mode of the print system between a suspension mode and a regular mode, in the suspension mode the instructions based on the print data from the print instruction device being interrupted according to the determination result of said ink amount determination device, and in the regular mode the instructions not being interrupted regardless of the determination result of the ink amount determination device.

15. The print system as set forth in claim 11 wherein  
said terminal apparatus comprises a recording medium parameter acquisition device that obtains parameter data representing parameters of the recording medium from the outside.

16. The print system as set forth in claim 15 wherein  
said terminal apparatus comprises a parameter input device that allows a user to input the parameters of the recording medium.

17. The print system as set forth in claim 11 wherein

said terminal apparatus comprises a mode switching device that switches the operation mode of the print system between a suspension mode and a regular mode, in the suspension mode the instructions based on the print data from the print instruction device being interrupted according to the determination result of said ink amount determination device, and in the regular mode the instructions not being interrupted regardless of the determination result of the ink amount determination device.

18. A terminal apparatus comprising:

an ink amount measurement device that measures the amount of ink ejected from the print head and stores the amount as a measurement value; and

an ink amount determination device that determines whether the measurement value stored in the ink amount measurement device exceeds a preset value when the recording medium is transferred by the upstream transfer device and a front end of the recording medium is moved to a first position.

19. The terminal apparatus as set forth in claim 18 further comprising a recording medium parameter acquisition device that obtains parameter data representing parameters of the recording medium from the outside.

20. The terminal apparatus as set forth in claim 18 further comprising a parameter input device that allows a user to input the parameters of the recording medium.

21. The terminal apparatus as set forth in claim 18 further comprising a mode switching device that switches the operation mode of the print system between a suspension mode and a regular mode, in the suspension mode the instructions based on the print data from the print instruction device being interrupted according to the determination result of said ink amount determination device, and in the regular mode the instructions not being interrupted regardless of the determination result of the ink amount determination device.

22. A printer comprising:

- a print head that ejects ink;

- an upstream transfer device that is provided in a feed path extending from a feed position to a counter area facing the print head, and transfers a recording medium along the feed path;

- a downstream transfer device that is provided in a discharge path extending from the counter area to a discharge position, and transfers the recording medium along the discharge path; and

- a print instruction device that provides instructions for

the upstream or downstream transfer device to transfer the recording medium and for the print head to eject ink in turn based on print data representing a predetermined image shown in an ejection pattern of ink to print the image upon the recording medium, wherein

the downstream transfer device is comprised of a drive roller and a driven roller so that the recording medium can be passed through between the drive roller and the driven roller, and

the print instruction device discontinues the instructions based on the print data if it is determined by an ink amount determination device that a measurement value exceeds the preset value, and instructs the upstream transfer device to transfer the recording medium from a first position to the downstream transfer device, and when a front end of the recording medium is transferred to the downstream transfer device to be held between the drive roller and the driven roller, further instructs the upstream transfer device to transfer the recording medium to a second position located at least downstream of the first position, the second position being the position where the printing should be performed next to the printing at the first position, so that the instructions based on the print data are continued when the front end of the recording medium has reached to the second position.

23. The printer as set forth in claim 22 further comprising a recording medium parameter acquisition device that obtains parameter data representing parameters of the recording medium from the outside.

24. The printer as set forth in claim 22 further comprising a parameter input device set that allows a user to input the parameters of the recording medium.

25. The printer as set forth in claim 22 further comprising a mode switching device that switches the operation mode of the print system between a suspension mode and a regular mode, in the suspension mode the instructions based on the print data from the print instruction device being interrupted according to the determination result of said ink amount determination device, and in the regular mode the instructions not being interrupted regardless of the determination result of the ink amount determination device.

26. A print method for a print system comprising a print head that ejects ink, an upstream transfer device that is provided in a feed path extending from a feed position to a counter area facing the print head, and transfers a recording medium along the feed path, and a downstream transfer device that is provided in a discharge path extending from the counter

area to a discharge position, and transfers the recording medium along the discharge path, the downstream transfer device being comprised of a drive roller and a driven roller, so that the recording medium is passed through between the drive roller and the driven roller,

a predetermined image being printed onto the recording medium when transfer of the recording medium to the upstream or downstream transfer device and ink ejection from the print head are instructed in turn based on print data representing the image shown in an ejection pattern of ink, the method comprising steps of:

measuring the amount of ink ejected from the print head and storing the amount as a measurement value;

determining whether the measurement value stored in the ink amount measurement device exceeds a preset value when the recording medium is transferred by the upstream transfer device and a front end of the recording medium is moved to a first position; and

discontinuing the instructions based on the print data if it is determined that the measurement value exceeds the preset value, and instructing the upstream transfer device to transfer the recording medium from the first position to the downstream transfer device, and when the recording medium is transferred to the downstream transfer device to be held between the drive roller and the driven roller, further instructing the upstream

transfer device to transfer the recording medium to a second position located at least downstream of the first position, the second position being the position where the printing should be performed next to the printing at the first position, so that the instructions based on the print data are continued when the front end of the recording medium has reached to the second position.

27. A print program that makes a computer system function as:

an ink amount measurement device that provides instructions for an upstream or downstream transfer device to transfer a recording medium and for a print head to eject ink in turn based on print data representing a predetermined image shown in an ejection pattern of ink to print the image upon the recording medium;

an ink amount measurement device that measures the amount of ink ejected from the print head and stores the amount as a measurement value; and

an ink amount determination device that determines whether the measurement value stored in the ink amount measurement device exceeds a preset value when the recording medium is transferred by the upstream transfer device and a front end of the recording medium is moved to a first position, wherein

the downstream transfer device is comprised of a drive roller and a driven roller so that the recording medium can be passed through between the drive roller and the driven roller, and

the print instruction device discontinues the instructions based on the print data if it is determined by the ink amount determination device that the measurement value exceeds the preset value, and instructs the upstream transfer device to transfer the recording medium from the first position to the downstream transfer device, and when the front end of the recording medium is transferred to the downstream transfer device to be held between the drive roller and the driven roller, further instructs the upstream transfer device to transfer the recording medium to a second position located at least downstream of the first position, the second position being the position where the printing should be performed next to the printing at the first position, so that the instructions based on the print data are continued when the front end of the recording medium has reached to the second position.